TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during July 1934, and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated.*—Continued

Atmospheric conditions during solar radiation measurements—Blue Hill Meteorological Observatory of Harvard University

Date and time from apparent noon	Air temperature	Wind (Beaufort scale)	Visibility. Scale, 0–10	Sky blueness	Cloudiness and remarks
July 1934	°C.				
2; 4:11 a	23.3	WNW 4	8	7	2 Ci.
2; 3:37 a	25.6	WNW 3	8	6	1 Ci.
2; 2:16 a	25.6	WNW 4	8	7	1 Ci.
2; 0:19 a	26.7	WNW 4	8	8	Few Ci; 1 Cu.
2; 1:37 p	27.8	WNW 4	9	6	1 Ci, 2 Cu. Wind gusty.
2; 4:04 p	28.3	W 4	8+	8	3 Cu; Wind gusty.
4; 3:12 a	21.7	NW 2	9	6	1 Ci, 1 Cu.
5; 1:45 p	26.1	WSW 4	9	6	Few Ci, 2 Acu.
5; 3:28 p	22.2	SWxW 5	9	6	2 Ci, 3 Acu, few Cu.
7; 1:17 a	29.4	SW 3	6–7	------	Few Ci, Cu, Stcu, Frcu; moderate haze.
8; 5:24 p	22.2	SExE 2	9	7	3 Acu, few Cu.
9; 3:10 a	18.6	NNE 6	8	5	1 Acu.
9; 1:10 a	19.7	NE 4	9	6	1 Acu; lt. hz.; smoke to the N-SW.
9; 1:27 p	20.3	ENE 2	9	7	1 Acu, few Frcu; smoke over Boston.
9; 4:22 p	21.9	E 1	9	7	2 Ci, few Cu.
10; 2:17 a	18.3	ENE 2	8	5	Few Acu, Cu.
10; 0:27 a	18.3	ENE 2	8	5	1 Stcu.
10; 3:07 p	20.0	NE 3	9	5	1 Cu. Smoke NW of Boston.
11; 4:00 a	18.3	SSE 1	8	5	2 Ci in NW; smoke on horizon.
11; 3:21 a	20.0	SExS 1	7–8	5	2 Ci in NW; smoke on horizon.
11; 0:06 a	27.2	SE 1	8	4	10 Ci, very thin sheet.
13; 2:36 a	20.6	SSW 2	7–8	------	2 Ci, few Cu, moderate haze.
13; 0:39 a	25.0	SSW 2	8	------	4 Stcu.
24; 3:15 a	21.7	ENE 1	8	5	2 Ci, few Cu.
24; 2:03 a	21.7	N 1	------	------	4 Ci, few Cu.
30; 4:30 p	22.4	ENE 3	8	------	1 Acu in south; few Ci in southeast.

POSITIONS AND AREAS OF SUN-SPOTS

Communicated by Capt. J. F. Hellweg, U.S. Navy, Superintendent U.S. Naval Observatory. Data furnished by the U.S. Naval Observatory in cooperation with Harvard and Mount Wilson Observatories. The difference in longitude is measured from the central meridian, positive west. The north latitude is positive. Areas are corrected for foreshortening and are expressed in millionths of the sun's visible hemisphere. The total area for each day includes spots and groups]

Date	Eastern standard time	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1934	h. m.	°	°	°				
July 1	12 0	No spots						Mount Wison.
July 2	11 14	No spots						U.S. Naval.
July 3	11 18	No spots						U.S. Naval.
July 4	12 20	No spots						U.S. Naval.
July 5	11 4	No spots						U.S. Naval.
July 6	14 30	−80.5	271.8	+21.5	448	------	448	Harvard.
July 7	11 15	−68.0	272.8	+24.0	153	------	153	Mount Wilson.
July 8	13 4	−55.5	271.2	+24.0	------	93	93	U.S. Naval.
July 9	11 9	−42.5	272.0	+24.0	------	131	131	U.S. Naval.
July 10	14 28	−28.0	271.4	+24.0	------	131	131	U.S. Naval.
July 11	11 15	−79.0	209.0	+2.0	46	------	------	U.S. Naval.
		−15.5	272.5	+24.0	123	------	169	
July 12	14 55	−63.0	209.7	+1.5	46	------	------	U.S. Naval.
		−1.0	271.7	+24.0	108	------	154	

TABLE 3.—*Total, I_m, and screened, I_y, I_r, solar radiation intensity measurements, obtained during July 1934, and determinations of the atmospheric turbidity factor, β, and water-vapor content, w=depth in millimeters, if precipitated.*—Continued

POSITIONS AND AREAS OF SUN-SPOTS—Continued

Date	Eastern standard time	Heliographic: Diff. in longitude	Heliographic: Longitude	Heliographic: Latitude	Area: Spot	Area: Group	Total area for each day	Observatory
1934	h. m.	°	°	°				
July 13	13 25	−50.0	210.3	+1.0	69	------	------	U.S. Naval.
		+11.0	271.3	+24.0	108	------	177	
July 14	11 5	−37.5	210.8	+1.0	69	------	------	U.S. Naval.
		+23.0	271.3	+24.0	108	------	177	
July 15	18 0	−20.0	211.3	+1.0	122	------	------	Mount Wilson.
		+41.0	272.3	+25.0	137	------	259	
July 16	11 8	−11.0	210.9	+1.0	62	------	------	U.S. Naval.
		+49.5	271.4	+25.0	108	------	170	
July 17	13 20	+3.0	210.4	+1.5	54	------	------	U.S. Naval.
		+63.0	270.4	+25.0	62	------	116	
July 18	11 13	+17.0	212.4	+1.5	46	------	------	U.S. Naval.
		+76.0	271.4	+25.0	46	------	92	
July 19	11 16	+30.0	212.1	+1.5	39	------	39	U.S. Naval.
July 20	13 26	+44.0	211.7	+1.5	8	------	8	U.S. Naval.
July 21	------	No spots			------	------	------	Harvard.
July 22	13 48	No spots			------	------	------	U.S. Naval.
July 23	11 17	No spots			------	------	------	U.S. Naval.
July 24	13 21	No spots			------	------	------	U.S. Naval.
July 25	11 38	No spots			------	------	------	U.S. Naval.
July 26	13 16	No spots			------	------	------	U.S. Naval.
July 27	9 0	No spots			------	------	------	Mount Wilson.
July 28	11 10	−10.0	53.0	+11.0	------	5	------	Mount Wilson.
		+10.0	73.0	−25.0	------	5	10	
July 29	11 15	+23.0	72.8	−25.0	------	7	7	Mount Wilson.
July 30	11 32	No spots			------	------	------	U.S. Naval.
July 31	11 29	No spots			------	------	------	U.S. Naval.
Mean daily area for 31 days	------	------	------	------	------	------	75	

PROVISIONAL SUN-SPOT RELATIVE NUMBERS FOR JULY 1934

(Dependent alone on observations at Zurich and its station at Arosa)

[Data furnished through the courtesy of Prof. W. Brunner, Eidgen. Sternwarte, Zurich, Switzerland]

July 1934	Relative numbers	July 1934	Relative numbers	July 1934	Relative numbers
1	0	11	*d* 24	21	7
2	0	12	*b* 24	22	0
3	0	13	25	23	0
4	0	14	24	24	7
5	0	15	17?	25	8
6	*d* 8	16	23	26	0
7	8	17	17	27	7?
8	11	18	17	28	7
9	11	19	17	29	0
10	18	20	8	30	0
				31	0

Mean: 31 days=9.3.

b=Passage of a large group or spot through the central meridian.
d=Entrance of a large or average-sized ctener of activity on the east limb.

AEROLOGICAL OBSERVATIONS

[Aerological Division, D. M. Little, in charge]

By L. T. SAMUELS

It will be noted that table 1 contains marked differences both in the names and number of stations from those given heretofore. This is owing to the expanded aerological program which became effective July 1, 1934, according to which daily flights are made at a number of Army and Navy stations in addition to those at Weather Bureau stations. The latter have been relocated in all cases, except Omaha, in order to obtain a better distribution over the country as a whole. Also, the times of observations, and maximum heights attained, at the military stations have been standardized to conform to those of the Weather Bureau in practically all cases. Because of the large number of new stations, it is impossible at present to determine departures from the normals, except in a few cases.

The free-air temperatures for July averaged highest over San Diego and lowest over Spokane. It is interesting to note the free-air temperatures at Billings and Cheyenne as compared with those far to the south. The action of insolation over this Plateau to cause higher temperatures of the air for considerable elevations above the surface, in contrast to those of the free air over adjacent low-lying regions for corresponding elevations above sea level, is thus brought out. Moreover, Cheyenne showed the most pronounced average temperature inversion directly off the surface of all the stations.